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10/523,113	09/13/2005	Wing Kin Chan	007198-619	7582

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EXAMINER
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RALIS, STEPHEN J

ART UNIT	PAPER NUMBER
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3742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/523,113

Applicant(s)

CHAN, WING KIN

Examiner

Stephen J. Ralis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2005 and 04 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. Applicant is notified of receipt and acknowledgement, on 04 December 2006, of the amendments to Application No. 10/523,113, filed on 03 February 2005.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the built-in ionizer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

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Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

With respect to the limitations of claims 5 and 7 and a "built-in ionizer", the Examiner requests that applicant add the ionizer to the Figure 7.

### ***Specification***

3. The disclosure is objected to because of the following informalities: all references to "ionising" should read –ionizing–.

Applicant has clearly recited the limitation of a "built-in ionizer" in dependent claims 5 and 7. In order to have consistent language and terminology in the instant application, the Examiner requests that the above noted references to "ionising" be changed to –ionizing–.

### ***Claim Objections***

4. Claim 1 is objected to because of the following informalities: line 5; "said heating element is" should read –said heating elements are–. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-4 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polaert et al. (U.S. Patent No. 5,790,749) in view of Walter et al. (U.S. Patent No. 4,260,875) and Schilling et al. (U.S. Patent No. 5,396,047).

Polaert et al. disclose a hair dryer including a main housing (10), a motor, a motor driven fan (air circulation means 13 including a motor M; see Figure 1), an air heating mechanism (14), control mechanism (18), a thermal sensor (detector for heat radiation 20), the main housing defining an air-passageway having an air-inlet and an air-outlet (see Figure 1), the air heating mechanism (14) being disposed intermediate the air-inlet and the air-outlet (heating element 14 disposed between inlet 11 and outlet 12; see Figure 1), the thermal sensor (detection mechanism 20) being disposed adjacent to the air-outlet and providing temperature information to the control

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mechanism (18) (column 2, lines 48-55), the control mechanism (18) including memory for storing temperature information and a means for comparing the temperature information received from the thermal sensor with pre-stored temperature information, the control mechanism (18) and air heating mechanism (14) being arranged to reduce heating power output according to a pre-determined manner when the received temperature information indicating a temperature exceeds a pre-determined threshold (column 2, lines 48-55; column 3, lines 7-11, 52-58; column 4, lines 1-6).

The claims differ from Polaert et al. in calling for the specific structure of the air heating mechanism having a first and second heating element.

However, a hair dryer having a first and second heating element, as described by Walter et al., is known in the art. Walter et al. teach an air heating mechanism comprising several heater coils (21) supported on a heater support board (22) (column 2, lines 33-35). Such an arrangement provides for an even distribution of heat to the forced airflow of the hair dryer, thereby improving the efficiency of the device. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generic air heating mechanism of Polaert with the heater coils and support board of Walter et al. to arrangement provide an even distribution of heat to the forced air flow of the hair dryer, thereby improving the efficiency of the device.

The Polaert-Walter combination discloses all of the limitations, as described above, except for reducing heating power output to the first and second heating elements by a non-dissipative power reduction scheme upon detection of received temperature information.

However, reducing heating power output to first and second heating elements by a non-dissipative power reduction scheme upon detection of received temperature information, as described by Schilling et al., is known in the art. Schilling et al. teach a an inner resistive heater (4) and outer resistive heater (3) being differently regulated by a control unit (10) such that the supplied power is periodically switched over and distributed in very short, but variable time intervals a continuously alternating manner (Abstract; column 6, line 57 – column 7, line 26). Such an arrangement provides 1) the advantage of heating two heating surfaces/elements continuously with the total power consumption remaining substantially constant (column 1, line 60, column 2, line 6) and 2) a method of maintaining a constant temperature, independent of heat removal (column 1, lines 55-60). In view of Schilling, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the temperature control of the heater coils with the continuously alternating reciprocating of the power supply to heating elements to provide a method of maintaining a constant temperature, independent of heat removal, and have a substantially constant total power consumption rate, thereby providing a more efficient and safer heater.

With respect to the limitation of claim 2 and the thermal sensor including a negative temperature coefficient ("NTC") device, Walter et al. teach the use of a negative temperature coefficient (NTC) resistor as a temperature-sensing device. (column 2, lines 59-62). Such an arrangement or material provides the thermal sensor the ability to provide a resistance responsive to a temperature, thereby easing temperature determination. In view of Walter, It would have been obvious to one of

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ordinary skill in the art at the time of the invention to modify a generic temperature detection mechanism with an NTC thermistor to supply a the thermal sensor with the ability to provide a resistance responsive to a temperature, thereby easing temperature determination.

With respect to the limitation of claim 3 and the first and second heaters being turned on and off according to a plurality of pre-determined patterns, the plurality of pre-determined patterns corresponding to a plurality of pre-determined discrete heating power and fan speed settings, Polaert discloses an automatic control means (control mechanism 18; see Figure 4) having a plurality of predetermined patterns (column 3, lines 7-57; see Table 1) corresponding to a plurality of heating power and fan speeds (curve 25 – power; curve 27 – air flowrate / fan speed). Walter et al. teach an air heating mechanism comprising several heater coils (21) supported on a heater support board (22) (column 2, lines 33-35). Schilling et al. teach a an inner heater (4) and outer heater (3) being differently regulated by a control unit (10) such that the supplied power is periodically switched over and distributed in very short, but variable time intervals a continuously alternating manner. Since the Polaert-Walter hair dryer combination has two heating coils and a fan being controlled based on a plurality of predetermined patterns, the Polaert-Walter hair dryer combination in view of Schilling would provide for further temperature maintaining control of the heating elements based on the continuous alternating reciprocating of the power supply to heating elements. Therefore, the Polaert-Walter hair dryer combination in view of Schilling control structure fully meets “the first and second heaters are turned on and off according to a plurality of pre-



determined patterns, the plurality of pre-determined patterns corresponding to a plurality of pre-determined discrete heating power and fan speed settings" given its broadest reasonable interpretation.

With respect to the limitation of claim 4 and a visual display means on the main housing for indicating the instantaneous operating conditions of the device, Walter et al. teach a neon lamp (30) being provided for indicating to the user when the heater is on/off. Therefore, the Polaert-Walter-Schilling hair dryer combination structure with an indicating neon lamp fully meets "a visual display means on the main housing for indicating the instantaneous operating conditions of the device" given its broadest reasonable interpretation.

With respect to the limitations of claims 13-15, the Polaert-Walter-Schilling hair dryer combination discloses all the limitations, as described above, except for the non-dissipative scheme includes the turning on and off of the first heating element during positive half-cycles of an alternating power supply and the turning on and off of the second heating element during negative half-cycles of the alternating power supply. It would have been an obvious matter of design choice to turn on and off the first heating element during positive half-cycles of an alternating power supply and the turn on and off of the second heating element during negative half-cycles of the alternating power supply, since Applicant has not disclosed that turning on and off of the first heating element during positive half-cycles of an alternating power supply and turning on and off of the second heating element during negative half-cycles of the alternating power supply solves any stated problem or is for any particular purpose and it appears that the

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invention would perform equally well with the continuous alternating reciprocating full-wave cycling of the power supply to the heating elements of Schilling et al. (column 7, lines 5-26; see Figure 2).

With respect to the limitations of claims 16 and 17 and a synchronization circuit, the synchronization circuit being arranged to co-operate with the controller to provide information for controlling the actuation timing of the first and second heating elements, wherein the synchronization circuit and the controller are arranged to mitigate harmonics due to switching of actuation between the first and second heating elements at or near the zero-crossing point, Schilling et al. teach a control device (20) providing a switching (32) of waves of the characteristic (29) into waves (33, 34) during the passage (31) of the characteristic (29) through the zero line (30) (column 6, line 57- column 7, line 26). Schilling et al. further teach that such a switching process causes no acoustic or clicking pulses (i.e. harmonics) (column 2, lines 17-22). Therefore, the Polaert-Walter-Schilling hair dryer combination control device structure fully meets “a synchronization circuit, the synchronization circuit being arranged to co-operate with the controller to provide information for controlling the actuation timing of the first and second heating elements, wherein the synchronization circuit and the controller are arranged to mitigate harmonics due to switching of actuation between the first and second heating elements” at or near the zero-crossing point given its broadest reasonable interpretation.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Polaert et al. (U.S. Patent No. 5,790,749) in view of Walter et al. (U.S. Patent No. 4,260,875) and Schilling et al. (U.S. Patent No. 5,396,047) as applied to claim 4 above, and further in view of Harris et al. (U.S. Patent No. 6,393,718).

The Polaert-Walter-Schilling hair dryer combination discloses all of the limitations, as described in claim 4 above, except for the hair dryer having built-in ionizer.

However, an ion generator in a hair dryer, as described by Harris et al., is known in the art. Harris et al. teach the utilization of a built-in ionizer to neutralize the ions that damage hair and promote the hair drying process while reducing the amount of heat required. Harris et al. further teach that at the same time charged ions fortify the hair. As a result the hair is more manageable and looks and feels better and thicker (column 1, line 64 – column 2, line 6).

The Polaert-Walter-Schilling hair dryer combination further discloses all of the limitations, as described in claim 4 above, except for the display means including a graphical representation showing operating conditions of the fan speed level and the operation status of a built-in ionizer.

However, displaying the fan speed level and the operation status of a built-in ionizer in a graphical representation, is known in the art. Harris et al. teach a display means (control panel 5) comprising a graphical representation of the fan speed (blower speed indicator lights 7a, 7b, and 7c in a tiered configuration; see figure 1, 3) and the operation status of a built-in ionizer (ionizer indicator light 6a based on activation of

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ionizer switch 6; column 2, lines 63-67; column 3, lines 1-6; see Figure 1, 3) to provide independent control and visualization of such control to the user, thereby providing an easy to use hair dryer over prior hand held hair dryers (column 2, lines 26-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Polaert-Walter-Schilling hair dryer combination with the ion generator of Harris et al. to provide a hair dryer that requires less time and uses less electricity as well as allowing the hair to be more manageable and look and feel better and thicker. It would have further been obvious to one of ordinary skill in the art at the time of the invention was made to modify indicator light of the Polaert-Walter-Schilling hair dryer combination with the control panel indicator functionality of Harris et al. to provide independent control and visualization of such control to the user, thereby providing an easy to use hair dryer over prior hand held hair dryers.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Polaert et al. (U.S. Patent No. 5,790,749) in view of Walter et al. (U.S. Patent No. 4,260,875), Schilling et al. (U.S. Patent No. 5,396,047) and Harris et al. (U.S. Patent No. 6,393,718) as applied to claim 5 above, and further in view of Drehler et al. (U.S. Patent No. 6,953,916).

The Polaert-Walter-Schilling-Harris hair device combination discloses all of the limitations, as described in claim 6 above, except for the display including an LCD display screen.

But a visual display including an LCD display screen, is known in the art. Drehler et al. teach a control device for a hairdresser tool comprising a visual display including an LCD display screen (LCD monitor 10 included in control device 1; column 5, lines 24-27; see Figure 1) to provide an efficiency mechanism to communicate the real/true status of the device to the user, thereby providing a more operationally efficient hairdressing tool. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the Walter-Harris hair device combination with the visual display including an LCD display screen of Drehler et al. to provide an efficiency mechanism to communicate the real/true status of the device to the user, thereby providing a more operationally efficient hairdressing tool.

10. Claims 6, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polaert et al. (U.S. Patent No. 5,790,749) in view of Walter et al. (U.S. Patent No. 4,260,875) and Schilling et al. (U.S. Patent No. 5,396,047) as applied to claim 4 above, and further in view of Drehler et al. (U.S. Patent No. 6,953,916).

The Polaert-Walter-Schilling hair dryer combination discloses all of the limitations, as described in claim 4 above, except for the visual display including an LCD display screen.

But a visual display including an LCD display screen, is known in the art. Drehler teaches a control device for a hairdresser tool comprising a display including an LCD display screen (LCD monitor 10 included in control device 1; column 5, lines 24-27; see

Figure 1) to provide an efficiency mechanism to communicate the real/true status of the device to the user, thereby providing a more operationally efficient hairdressing tool.

The Polaert-Walter-Schilling hair dryer combination further discloses all of the limitations, as described in claim 4 above, except for the display means including a numerical displaying showing the instantaneous power of the heater and the display including an LCD display screen.

But displaying information in a numerical display and a visual display including an LCD display screen, is known in the art. Drehler et al. teach a control device for a hairdresser tool comprising optical indicators for indicating the heating phase of the heater and if the target temperature is reached (column 3, lines 58-63). Drehler et al. also teach that the heating phase and target temperature may be actually indicated on the display (a display that indicates actual and target temperature is inherently a numerical display; column 3, lines 63-65). Drehler et al. further teach a visual display including an LCD display screen (LCD monitor 10 included in control device 1; column 5, lines 24-27; see Figure 1), all to provide an efficiency mechanism to communicate the real/true status of the device to the user, thereby providing a more operationally efficient hairdressing tool.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the Polaert-Walter-Schilling hair dryer combination with the display including an LCD display screen of Drehler et al. to provide an efficiency mechanism to communicate the real/true status of the device to the user, thereby providing a more operationally efficient hairdressing tool. It would have further been

obvious to one of ordinary skill in the art at the time of the invention was made to modify the Polaert-Walter-Schilling hair dryer combination with the numerical display teaching of Drehler et al. to provide an efficiency mechanism to further communicate the real/true status of the device to the user, thereby providing an even more operationally efficient hairdressing tool.

11. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polaert et al. (U.S. Patent No. 5,790,749) in view of Walter et al. (U.S. Patent No. 4,260,875), Schilling et al. (U.S. Patent No. 5,396,047) and Drehler et al. (U.S. Patent No. 6,953,916) as applied to claim 6 above, and further in view of Harris et al. (U.S. Patent No. 6,393,718)

The Polaert-Walter-Schilling-Drehler hair dryer combination discloses all of the limitations, as described in claim 4 above, except for the hair dryer having built-in ionizer.

However, an ion generator in a hair dryer, as described by Harris et al., is known in the art. Harris et al. teach the utilization of a built-in ionizer to neutralize the ions that damage hair and promote the hair drying process while reducing the amount of heat required. Harris et al. further teach that at the same time charged ions fortify the hair. As a result the hair is more manageable and looks and feels better and thicker (column 1, line 64 – column 2, line 6).

The Polaert-Walter-Schilling-Drehler hair dryer combination further discloses all of the limitations, as described in claim 4 above, except for the display means including

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a graphical representation showing operating conditions of the fan speed level and the operation status of a built-in ionizer.

However, displaying the fan speed level and the operation status of a built-in ionizer in a graphical representation, is known in the art. Harris et al. teach a display means (control panel 5) comprising a graphical representation of the fan speed (blower speed indicator lights 7a, 7b, and 7c in a tiered configuration; see figure 1, 3) and the triggering of an ionizer (ionizer indicator light 6a based on activation of ionizer switch 6; column 2, lines 63-67; column 3, lines 1-6; see Figure 1, 3) to provide independent control and visualization of such control to the user, thereby providing an easy to use hair dryer over prior hand held hair dryers (column 2, lines 26-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify The Polaert-Walter-Schilling-Drehler hair dryer combination with the ion generator of Harris et al. to provide a hair dryer that requires less time and uses less electricity as well as allowing the hair to be more manageable and look and feel better and thicker. It would have further been obvious to one of ordinary skill in the art at the time of the invention was made to modify indicator light of the Polaert-Walter-Schilling-Drehler hair dryer combination with the control panel indicator functionality of Harris et al. to provide independent control and visualization of such control to the user, thereby providing an easy to use hair dryer over prior hand held hair dryers.



***Response to Arguments***

12. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

13. With respect to Applicant's argument of "ionizing" versus –ionizing–, Applicant has clearly recited the limitation of a "built-in ionizer" in dependent claims 5 and 7. In order to have consistent language and terminology in the instant application, the Examiner requests that the above noted references to "ionising" be changed to –ionizing–.

14. With respect to the limitations of claims 5 and 7 and a "built-in ionizer", the Examiner requests that applicant add the ionizer to the Figure 7.

***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

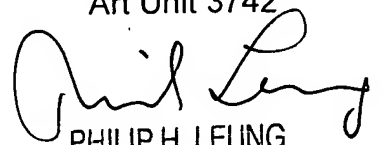
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Ralis whose telephone number is 571-272-6227. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Leung can be reached on 571-272-4782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Stephen J Ralis  
Examiner  
Art Unit 3742



PHILIP H. LEUNG  
PRIMARY EXAMINER  
ART UNIT 3742

ACTING

SJR  
March 01, 2007